1. **ButtonDemo3.java**

```
// Perform all arithmetic operations using AWT components
import java.awt.*;
import java.awt.event.*;

class Calculator1 implements ActionListener
 {
   Label lb1,lb2,lb3;
    TextField txt1,txt2,txt3;
    Button btn1,btn2,btn3,btn4,btn5,btn6;
   Frame f;
   Calculator1 ()
   {
         f=new Frame("Calculator");
        f.setSize(500,500);
        f.setVisible(true);

      lb1 = new Label("Number 1");
      lb2 = new Label("Number 2");
      lb3 = new Label("Result");

      txt1 = new TextField(10);
      txt2 = new TextField(10);
      txt3 = new TextField(10);
      btn1 = new Button("Add");
      btn2 = new Button("Sub");
      btn3 = new Button("Multi");
      btn4 = new Button("Div");
      btn5 = new Button("Mod");
      btn6 = new Button("Reset");

       lb1.setBounds(20, 50, 80, 20);
      txt1.setBounds(120, 50, 100, 20);
       lb2.setBounds(20, 80, 80, 20);
      txt2.setBounds(120, 80, 100, 20);
       lb3.setBounds(20, 110, 80, 20);
      txt3.setBounds(120, 110, 100, 20);

      btn1.setBounds(20,140,50,30);
         btn2.setBounds(80,140,50,30);
         btn3.setBounds(140,140,50,30);
      btn4.setBounds(200,140,50,30);
      btn5.setBounds(260,140,50,30);
      btn6.setBounds(300,140,50,30);


          f.add(lb1);
        f.add(txt1);
        f.add(lb2);
        f.add(txt2);
        f.add(lb3);
```

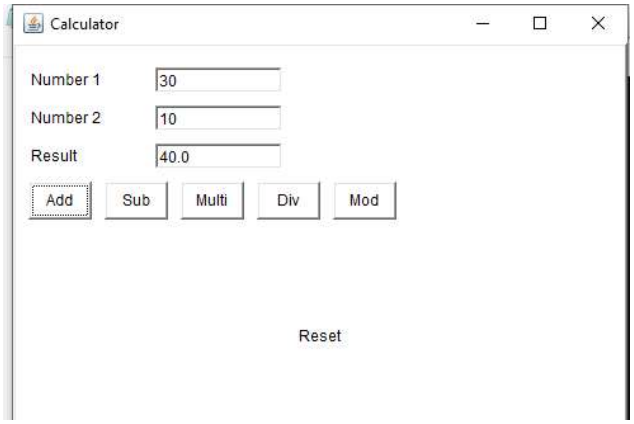
```
        f.add(txt3);
        f.add(btn1);
        f.add(btn2);
        f.add(btn3);
        f.add(btn4);
        f.add(btn5);
        f.add(btn6);


        btn1.addActionListener(this);
        btn2.addActionListener(this);
        btn3.addActionListener(this);
        btn4.addActionListener(this);
        btn5.addActionListener(this);
        btn6.addActionListener(this)
}
public void actionPerformed(ActionEvent ae)
{
        double a=0,b=0,c=0;
        try
        {
        a = Double.parseDouble(txt1.getText());
        }
         catch (NumberFormatException e)
                {           txt1.setText("Invalid input");    }
        try
         {
         b = Double.parseDouble(txt2.getText());
        }
        catch (NumberFormatException e)
                {                   txt2.setText("Invalid input");       }
        if(ae.getSource()==btn1)
        {
          c = a + b;
          txt3.setText(String.valueOf(c));
        }
        else if(ae.getSource()==btn2)
        {
          c = a - b;
        txt3.setText(String.valueOf(c));
        }
        else if(ae.getSource()==btn3)
    {
       c = a * b;
       txt3.setText(String.valueOf(c));
    }
       else if(ae.getSource()==btn4)
    {
       c = a / b;
       txt3.setText(String.valueOf(c));
    }
    else if(ae.getSource()==btn5)
```

```
        {
           c = a % b;
           txt3.setText(String.valueOf(c));
            }
           else    //if(ae.getSource()==btn6)
            {
           txt1.setText("0");
           txt2.setText("0");
           txt3.setText("0");
           System.exit(0);
        }

      }
 }
 class ButtonDemo3
{
        public static void main(String args[])
        {
                Calculator1 obj = new Calculator1();

        }
}
```



2. MouseListenerExample.java

```
//Handling different mouse events
import java.awt.*;
import java.awt.event.*;
public class MouseListenerExample extends Frame implements MouseListener{
   Label l;
   MouseListenerExample(){
      addMouseListener(this);

      l=new Label();
      l.setBounds(20,50,100,20);
      add(l);
      setSize(300,300);
      setLayout(null);
```

```
        setVisible(true);
    }
    public void mouseClicked(MouseEvent e) {
        l.setText("Mouse Clicked");
    }
    public void mouseEntered(MouseEvent e) {
        l.setText("Mouse Entered");
    }
    public void mouseExited(MouseEvent e) {
        l.setText("Mouse Exited");
    }
    public void mousePressed(MouseEvent e) {
        l.setText("Mouse Pressed");
    }
    public void mouseReleased(MouseEvent e) {
        l.setText("Mouse Released");
    }
public static void main(String[] args) {
    new MouseListenerExample();
}
}
```

3. Window.java

```
// Java program to demonstrate the use of WindowListener
// interface and its methods
import java.awt.*;
import java.awt.event.*;
import java.awt.event.WindowListener;

public class Window implements WindowListener {
    public Window()
    {
        // Create a frame
        Frame f = new Frame("WindowListener Example");

        // Create a label
        Label l = new Label("Handling window events");

        // Set properties of label
        l.setBounds(100, 90, 240, 120);
        l.setForeground(Color.GREEN);
            Font f1=new Font("Serif", Font.BOLD, 22);
        l.setFont(f1);

        // Add it to the frame
        f.add(l);

        // Add windowListener to the frame
        f.addWindowListener(this);
```

```
        // Set properties of frame
        f.setSize(400, 300);
        f.setLayout(null);
        f.setVisible(true);
    }

    // Override all the abstract methods of WindowListener
    // interface
    public void windowOpened(WindowEvent e)
    {
        System.out.println("Window is opened!");
    }

    public void windowClosing(WindowEvent e)
    {
        System.out.println("Window is closing...");
        System.exit(0);
    }

    public void windowClosed(WindowEvent e)
    {
        System.out.println("Window is closed!");
    }

    public void windowIconified(WindowEvent e)
    {
        System.out.println("Window is iconified!");
    }

    public void windowDeiconified(WindowEvent e)
    {
        System.out.println("Window is deiconified!");
    }

    public void windowActivated(WindowEvent e)
    {
        System.out.println("Window is activated!");
    }

    public void windowDeactivated(WindowEvent e)
    {
        System.out.println("Window is deactivated!");
    }

    // Main method
    public static void main(String[] args) { new Window(); }
}
```

4. KeyListenerExample.java

// Implementing the methods of the KeyListener interface.

```
import java.awt.*;
import java.awt.event.*;

public class KeyListenerExample extends Frame implements KeyListener
 {

        Label l;
        TextArea area;

   KeyListenerExample()
   {

      l = new Label();
      l.setBounds (20, 50, 100, 20);   // setting the location of the label in frame
      area = new TextArea();
      area.setBounds (20, 80, 300, 300);
      area.addKeyListener(this);
      add(l);
         add(area);
      setSize (400, 400);
      setLayout (null);
      setVisible (true);
   }
// overriding the keyPressed() method of KeyListener interface where we set the text of the
label when key is pressed
   public void keyPressed (KeyEvent e) {
      l.setText ("Key Pressed");
   }
// overriding the keyReleased() method of KeyListener interface where we set the text of the
label when key is released
   public void keyReleased (KeyEvent e) {
      l.setText ("Key Released");
   }
// overriding the keyTyped() method of KeyListener interface where we set the text of the
label when a key is typed
   public void keyTyped (KeyEvent e) {
      l.setText ("Key Typed");
   }
  // main method
   public static void main(String[] args) {
      new KeyListenerExample();
   }
}
```

5. MyGridLayout.java

```
// Create a GridLayout
import java.awt.*;
import javax.swing.*;

public class MyGridLayout{
```

```
JFrame f;
MyGridLayout(){
   f=new JFrame();
        JTextField text = new JTextField(50);
JButton b17=new JButton("C");
   JButton b1=new JButton("1");
   JButton b2=new JButton("2");
   JButton b3=new JButton("3");
   JButton b4=new JButton("4");
   JButton b5=new JButton("5");
      JButton b6=new JButton("6");
      JButton b7=new JButton("7");
   JButton b8=new JButton("8");
      JButton b9=new JButton("9");
JButton b16=new JButton("0");
JButton b15=new JButton(".");
  JButton b10=new JButton("+");

JButton b11=new JButton("-");
JButton b12=new JButton("/");
JButton b13=new JButton("*");
JButton b14=new JButton("=");
f.add(text); f.add(b17);
   f.add(b1);f.add(b2);f.add(b3);f.add(b4);f.add(b5);
   f.add(b6);f.add(b7);f.add(b8);f.add(b9); f.add(b16); f.add(b15); f.add(b10);
   f.add(b11); f.add(b12);f.add(b13);f.add(b14);

   f.setLayout(new GridLayout(5,5,4,5));
   //setting grid layout of 3 rows and 3 columns

   f.setSize(250,250);
   f.setVisible(true);
         f.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
}
public static void main(String[] args) {
   new MyGridLayout();
}
}
```